

## CLAIMS

We claim:

1. A method of identifying compounds for use in a pharmaceutical composition having an anti-viral effect against CXCR4-dependent HIV activity comprising:
  - providing a first aliquot of CXCR4-expressing GH-Tg cells;
  - contacting said first aliquot with HIV particles;
  - providing a second aliquot of CXCR4-expressing GH-Tg cells;
  - contacting said second aliquot with a test ligand;
  - contacting said second aliquot with HIV particles; and
  - isolating virus from said first and said second aliquot of cells, wherein a decrease in the ability to isolate virus from said second aliquot of cells indicates said test ligand possess anti-viral activity against HIV.
2. The method of identifying compounds for use in a pharmaceutical composition having an anti-viral effect against CXCR4-dependent HIV activity, according to Claim 1, wherein said second aliquot of cells is contacted with a plurality of test ligands.
3. A method of identifying compounds for use in a pharmaceutical composition having a therapeutic effect against a disease involving CXCR4-dependent chemotaxis comprising
  - providing a first aliquot of CXCR4-expressing GH-Tg cells;
  - contacting said first aliquot with CXCL12;
  - measuring a first migration index;
  - providing a second aliquot of CXCR4-expressing GH-Tg cells;
  - contacting said second aliquot with CXCL12;
  - contacting said second aliquot with a test ligand;
  - measuring a second migration index; and
  - determining a therapeutic potential.
4. The method of identifying compounds for use in a pharmaceutical composition having a therapeutic effect against a disease involving CXCR4-dependent chemotaxis, according to Claim 3, wherein

said disease is associated with aberrant leukocyte recruitment or activation, said disease being selected from the group consisting of arthritis, psoriasis, multiple sclerosis, ulcerative colitis, Crohn's disease, allergy, asthma, AIDS associated encephalitis, AIDS related maculopapular skin eruption, AIDS related interstitial pneumonia, AIDS related enteropathy, AIDS related periportal hepatic inflammation and AIDS related glomerulo nephritis

5. The method of identifying compounds for use in a pharmaceutical composition having a therapeutic effect against a disease involving CXCR4-dependent chemotaxis, according to Claim 3, wherein

    said cell is a CXCR4 expressing cell selected from the group consisting of thymocytes, CD34+ cells, B lymphocytes, T lymphocytes, dendritic cells, macrophages, neutrophils, and platelets.

6. The method of identifying compounds for use in a pharmaceutical composition having a therapeutic effect against a disease involving CXCR4-dependent chemotaxis, according to Claim 5, wherein said cell is an IM-9 cell.

7. A method of identifying compounds for use in a pharmaceutical composition having a therapeutic effect against a SOCS3 inhibitable disease comprising:

    providing a first cell having at least one chemokine receptor expressed thereon, said first cell having been transfected with at least one SOCS construct;

    contacting said first cell with at least one chemokine;

    measuring a first migration index;

    providing a second cell having at least one chemokine receptor expressed thereon, said second cell having been transfected with at least one SOCS construct;

    contacting said second cell with at least one chemokine;

    measuring a second migration index; and

    determining a therapeutic potential.

8. The method of identifying compounds for use in a pharmaceutical composition having a therapeutic effect against a SOCS3 inhibitible disease, according to Claim 7, wherein said cells are HEK-293 cells.

9. The method of identifying compounds for use in a pharmaceutical composition having a therapeutic effect against a SOCS3 inhibitible disease, according to Claim 7, wherein said cells are IM-9 cells.

10. A method of treating a subject having a disease associated with CXCR4-dependent HIV comprising administering to said subject a therapeutically anti-viral effective amount of a compound that induces the expression of SOCS3 and a pharmaceutically acceptable carrier.

11. The method of treating a subject having a disease associated with CXCR4-dependent HIV, according to Claim 10, wherein said subject is an animal in need of such treatment selected from the group cossisting of humans, domestic animals, and laboratory animals.

12. The method of treating a subject having a disease associated with CXCR4-dependent HIV, according to Claim 10, wherein said molecule binds to GHR.